



Customer testimonial: Mt Thorley Warkworth

DUST SUPPRESSION SUCCESS IN EVEN THE DIRTIEST COAL MINING ENVIRONMENT

“We have never had to service one Bürkert component. 100% uptime, 100% success and no maintenance.”

Ged Mungoven, Coal Preparation Plant Maintenance Supervisor at Coal & Allied’s Mt Thorley Warkworth Mine, said that coal mining, transport and preparation is one of the dirtier mining applications around.

“The black gritty coal dust gets into everything, clogging up pipes, mechanical parts: really anything that isn’t specialised for such a demanding environment.”

In the past, pipes, valves and solenoid valves (actuated with water) were clogged with scale due to poor water integrity, voiding the dust suppression system. These faults occurred once a month on each valve, necessitating removal of the coil in order to clean the blocked wetted (internal) parts of the pilot valve.

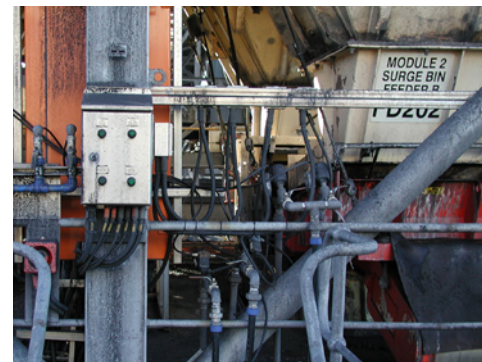
“Each valve would take about 30 mins to clean,” said Mr Mungoven. “You include the time to travel to the valve site and multiply it by the number of valves we have on site at Mt Thorley Warkworth, and it adds up to a considerable maintenance liability. We also wanted to standardise site-wide on 24 Volts.

“The local Bürkert representative, Keith Dumbrill, looked at our problem and considered what would be the best option. Keith suggested the 2000 series angle seat valve, pneumatic actuated, with the closed coupled series 331 solenoid valve, which is suitable for occasional water laden pneumatics.

“Where possible, we used an arrangement involving multiple solenoid valve pilot valves with pneumatic conditioning, securely cased within a custom-designed stainless steel enclosure. The enclosure design included a sloping roof to reduce coal dust contamination,” he said.

“We started replacing old valves two years ago, and have never had to service one of them. 100% uptime, 100% success and – so far – no maintenance.

“That frees up my teams’ time, which is a real saving.”



Coal feeder dust suppression systems



Mt Thorley Warkworth coal handling and preparation plant.

Type 2000 Angle Seat & Type 331 Solenoid Valves and Flow Meters





Bürkert Type 2000 Angle Seat Valves, with Type 331 Pilot Valves [Left]. Bürkert panel enclosure for infrastructure [centre], keeping device contents clean. Bürkert Flow Meter .

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Dayshift Maintenance Electrician Mr Colin Bagnall at Mt Thorley Warkworth – responsible for installing, monitoring and ensuring optimum uptime – agrees.

“We have been using the Bürkert valves on the coal feeder dust suppression system for two years now, with no failures from the production side.

“The second ROM [Run Of Mill] dust suppression system was commissioned with the 2000 series Bürkert angle seat valves and the 311 solenoid valves. The system has been operational for 12 months, and despite the challenging conditions we have experienced no problems,” said Mr Bagnall.

The dust suppression system air and water lines are connected to PLCs, which are controlled via SCADA for complete automation of the dust suppression system. The Bürkert valves were patched into an existing site network topography, to minimise hardware costs. For example, when trucks reverse to the coal delivery bin hoppers at the preparation plant, sensors note the truck presence in the delivery bay and initiate the dust suppression water flows.

“The Bürkert solution for our dust suppression flows is one of the most reliable systems I have seen,” said Mr Mungoven. “Dust suppression is a hot issue in mining right now, and the Bürkert solution is quick, effective and good value.

“The more we look around Mt Thorley Warkworth, the more places we see to install the dust suppression system. And with Bürkert, we can be confident that it will do the job without adding to my team’s workload.”

A Bürkert Solution for Dust Suppression

For Mt Thorley Warkworth, Bürkert's Operations and Projects teams worked together with local representative Keith Dumbrill and the mine site to ensure the best and most effective solution was suggested.

The Bürkert dust suppression system solution would be applicable to the vast majority of Australian mine sites – and with current safety trends in the industry, now is a good time to start planning for mining site safety improvements.

Contact Bürkert to discover more about our comprehensive solutions packages for mine sites and mineral preparation processes.

Bürkert - the Smart Choice in Fluid Control Systems

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About Mt Thorley Warkworth

More than 9 million tonnes per annum (Mtpa) of feed coal is mined at the Mt Thorley Warkworth operation and delivered to the Coal Preparation Plant, where it is off-loaded into the dump hoppers. Processing yields 5.8 Mtpa of salable coal.

Mt Thorley retains 20.5Mt of marketable reserves of thermal and coking coal, with the adjacent Warkworth mine adding a massive 161.6Mt reserve to that amount.

At the coal preparation plant, coal from each dump hopper is fed into rotary sizers and finally onto raw coal conveyors for delivery to the process plant. Due to the movement of considerable volumes of coal, dust suppression in these areas is critical, and is achieved by wetting with water. This water is recycled and reused.

The Mt Thorley Warkworth coal mine and coal preparation plant has 558 local employees, and is just 15km from Singleton. The dust suppression system is therefore vital to minimising airborne dust on the worksite, and contamination of residential areas.

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